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STATISTICS RELATED TO FOOD SAFETY AND QUALITY

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STATISTICS RELATED TO FOOD SAFETY AND QUALITY

Item 4 of the Provisional Agenda

I. NEED FOR ADEQUATE STATISTICAL DATA/INFORMATION FOR FOOD SAFETY AND QUALITY

The Joint UNECE/EUROSTAT/FAO/OECD Meeting on Food and Agricultural Statistics in Europe held in Geneva from 2-4 July 2003 discussed the statistics and analysis of food supply, food quality, food safety, consumer needs and international trade flows. Participants became aware of the difficulties encountered in the collection of data in these areas, and in particular in the field of food safety and quality. Major challenges identified in the area of food safety and quality were the many different organizations which are involved in the various relevant issues, and the diversity of methodologies that are used in the generation, compilation and dissemination of reliable data.

On that occasion, it was agreed that data requirements for food safety and quality be given more attention. The present paper provides additional elements for discussion on data needs, data collection and evaluation for use in food safety and quality, and related activities in the European Region.

Food safety is a major concern worldwide. Increasing food-borne disease incidence over the last decade has been caused by pathogenic microorganisms, chemical contaminants, residues and toxicants in food. Consumers, national food control authorities, agro-industry officials and food traders are constantly challenged by emerging food-borne risks that not only capture public attention but also have an important sanitary and economic impact in the countries and their populations. In addition diet-related chronic diseases are increasing in both developed and developing countries. This has highlighted the importance of another format of information, that of food or nutrient composition data, in formulating health and agriculture as well as trade related policies.

This situation has pushed several countries of the Region to undertake a comprehensive evaluation and reorganization of their food systems in order to improve efficiency, rationalize the use of human resources and harmonize approaches. This evaluation of food systems has resulted in convergence on the necessity to shift from the traditional approach that relied heavily on end-product inspection, sampling and analysis, to a more preventative, risk-based food safety and quality approach.

Risk analysis, a process consisting of risk assessment, risk management and risk communication, has emerged as a structured model for improving food systems, with the objectives of producing safer food, reducing the numbers of food-borne illnesses, achieving population nutritional adequacy, and facilitating domestic and international trade in food. Therefore, national authorities from the Region are making efforts to apply this new approach and ensure that prevention and control measures in place are science-based and that there are mechanisms, data and information that permit an evaluation of their effectiveness not only in terms of reduction of food-borne and diet-related chronic diseases but also in terms of reduction of the economic burden, e.g. reduction of food losses, and facilitation of food trade.

The type of data/information needed, varies in accordance with the specific purpose of a particular activity or measure. It could be different at different steps of the food chain (from pre-production practices to the point of sale or distribution to consumers) and could include technical data as well as economic data needed for cost-benefit analysis. Therefore, it is necessary that countries from the Region determine their specific needs and / or actions relevant to food safety and quality and nutritional adequacy and identify mechanisms and strategies to routinely collect data/information to address pertinent issues. Eurostat has an inventory of data available in EC Member States and Candidate Countries (Martínez Palau, 2003). Such an inventory needs to be conducted in other European countries.

II. TYPE OF DATA NEEDED:

Data on food production, consumption, trade, contaminant levels, food-borne diseases and diet-related chronic diseases are critical to support countries' agricultural, economic and food security programmes. They are also important for carrying out risk assessment work and for defining strategies to tackle food safety and quality problems.

Food production, consumption and trade.

Statistics and other information on food production, consumption and trade are used in many sectors for various analyses, particularly for economic issues. However, certain formats of these data are also of great value in the area of food safety and quality and nutrient assessment.

Data on **food production**, for example, combined with data on food import/exports, enable the identification of priority products requiring major attention for both nutrition and food control purposes. This facilitates medium and long term planning and assists in the identification of priority areas for resource allocation. Data on **food consumption** permit evaluation/prediction of potential hazards for a particular target population or sub-population group. These data are also useful to establish priorities in food security programmes. There are different sources of data available in this field. Often, it is important to disaggregate the data to meet specific needs of a country or group of countries. For example, in the case of microbiological risk assessment the volume of a specific food product consumed annually by the population is often not sufficient and consumption may need to be broken down and expressed as the number of eating occasions in a year and the serving size per eating occasion. Information on food consumption is vital for calculating contaminant intake and exposure levels to various food-borne hazards. Food consumption studies of human populations including specific sub-populations like children and the elderly, using validated protocols, are also necessary for calculating food and nutrient intake among specific target groups.

Data on **food trade**, particularly that on detention and rejection of foodstuffs in international trade, including the reason or cause of detention/rejection, is another important area that can provide useful information on issues such as the efficacy of the food control measures and systems. Such data can inform decisions that need to be taken to reduce the burden of food-borne disease and prevent the entry of harmful or improperly labelled products. This type of data allows monitoring and identification at, for example, national, regional or international levels of the most common causes of food detention and rejection and so helps identify critical areas where action is needed. In the United States of America, for example, the Food, Drug and Cosmetic Act and the Nutrition Labelling and Education Act enable the Food and Drug Administration to detain or confiscate a regulated item that appears to be out of compliance with the act. This covers a vast range of commodities and manufactured food products. Each month, the import refusal report (IRR) is published based on data generated by the FDA's Operational and Administrative Import Support (OASIS). The data are available by country and by product commodity. The European Commission is operating a Rapid Alert System for Food and Feed. The system was established under Article 8 of Directive 92/59/EEC which provided a procedure to inform the Member States when a product presents a serious risk for the health and safety of consumers. It received a new legal base in February 2002 (Regulation (EC) N° 178/2002) which extended the system to also cover feedstuffs and so it now includes all food and feed products finally destined for human consumption. The principal objective is to prevent the placement on the community market foodstuffs which pose a serious risk to health of the consumer. Countries of the Region need therefore to collect data not only on the volume/value of their imports/exports but also on the safety and nutritional quality of their products, causes of rejections and detentions and safety/quality of food imported in the country. Information available at international level could facilitate the setting of priorities. Examples of such information include studies carried out by FAO on causes of detentions and rejections in international fish trade (FAO, 2005a) and the study on WTO/SPS food safety notifications from 2000 to 2004 (FAO, 2005b).

Data needed for the implementation of risk assessment

Risk assessment is a tool for the evaluation of the safety of food. The goal of a risk assessment is to provide an estimate of a hazard in a given population, but it may be limited to evaluation of one of several steps of a food production or processing system. The scope of risk assessment needs to be defined by risk managers with regard to the problem he/she needs to deal with, the questions to be addressed by the risk assessment, and the indication of the measures the manager would consider or has available for addressing the problem.

Basic information for risk assessment include data on the prevalence and/or concentration of the hazard in the food, data on consumption of potentially contaminated foods, information on the human health impact of exposure to the hazard in the general population as well as specific sub-population groups such as the very young, the elderly, pregnant women and malnourished or immunocompromised people. Such data may be available from food contamination monitoring programs and food consumption surveys.

At the international level, risk assessment of chemical hazards in food is carried out by the Joint FAO/WHO Expert Meetings on Food Additives (JECFA) (http://www.fao.org/es/ESN/jecfa/index_en.stm), which deal with food additives, contaminants, natural occurring toxicants and residues of veterinary drug residues and the Joint FAO/WHO Meeting on Pesticide Residues (JMPR) (<http://www.fao.org/ag/agp/agpp/pesticid/a.htm>) which carry out toxicological evaluations of pesticide residues. Risk assessment of microbiological hazards in food is carried out by the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA) (http://www.fao.org/es/ESN/jemra/index_en.stm). Countries from the Region need to periodically submit data to these bodies/expert meetings in order to assure that the situation prevalent in the Region is considered in the international assessment work. In the region, the European Food Safety Authority (EFSA) is the institution responsible for the implementation of risk assessments for member countries of the European Union (EU). Risk assessment work in general would greatly benefit from harmonization of the systems used for data collection by EU countries, EFSA, countries that are not members of the EU and international bodies (ALINORM CX/EURO/04/3 Add. 1)

Contaminants and other chemical compounds in foods: The safety and/or risk assessment of food additives, contaminants, naturally occurring toxicants and residues of veterinary drugs in foods, requires the availability of data on the precise levels of these compounds in the food supply. This data, combined with food consumption data, is used to determine the intake of these different contaminants by a given population or sub-population group. The estimation of this dietary intake of chemicals in food is required in the calculation of the population / sub-population group exposure to these contaminants (exposure assessment). Contaminant levels in food are also needed for toxicological evaluations and definition of maximum residue levels (MRLs). Furthermore, information on the levels of chemicals in food is important for food monitoring and control programmes at the production level, particularly when food additives are used in food manufacturing processes to ensure that the amounts of these additives in the final product do not exceed permitted levels. Data on contaminant levels can also assist in the analysis and evaluation of factors responsible for the occurrence of contaminants and natural toxins in food products including effects of processing on their levels in food.

The safety and/or risk assessment of chemical compounds/contaminants that are found in food requires statistically reliable data. These include:

- Levels of chemical compounds / contaminants in food and in the total diet. The quality and quantity of those data are essential for intake assessment.
- Levels and patterns of occurrence of contaminants in food commodities and food products, as well as levels and patterns of human exposure from other relevant sources of the contaminants (Contribution of food to total exposure).

- Data relevant to the, occurrence and bioaccumulation, formation/fate during food manufacturing/processing, and identification and quantification of the substances.
- Data on the sources of contaminants.
- Epidemiological and toxicological studies
- Dietary exposure, including national dietary intake and national monitoring basket surveys

Microbiological hazards: With regard to the type of data required for the risk assessment of microbiological hazards in food it is similar in many ways to that required for the assessment of chemical compounds / contaminants in foods. In summary it includes:

- Data on the prevalence and numbers of the microbial hazard in particular food products.
- Information on the food chain including the effect of various steps and processes along the food chain on the prevalence and numbers of the hazard.
- Information on the characteristics of the specific food product of interest and the state in which it is consumed.
- Information on the source of the hazard.
- Data on consumption patterns of specific food commodities including information on serving size, frequency of consumption, location of consumption (home, restaurant, street vendors etc.) by the general population as well as specific sub-population groups
- Data on the burden of disease associated with a particular microbiological hazard including the range of adverse health effects in the general population and specific sub population groups (outbreak investigations, epidemiological studies) and the dose required to cause that effect

Nutrients: Risk assessment for nutrients and related substances is relevant as intakes of supplements, nutrient fortified/enriched foods, and special dietary products is increasing worldwide. The first Nutrient Risk Assessment Workshop, undertaken as part of the FAO/WHO programme in Nutrient Requirements, was held in May 2005 and will report to the next session of the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU). This is a new area of risk assessment and one that is likely to define further data needs in the future as the issue of tolerable upper limits for vitamins and minerals is being considered within the Codex system and will be an important part of future work under the joint FAO/WHO Nutrient Requirement programme.

Biotechnology: The use of modern biotechnology for the genetic modification of plants, microorganisms and animals for the production and the processing of foods poses additional concerns to certain consumer groups. FAO, jointly with WHO, organizes consultations to consider general safety and nutritional aspects of foods derived from modern biotechnology. (http://www.fao.org/es/ESN/food/risk_biotech_en.stm). As this is a new area of work there are new requirements for data in this field. These include data on:

- consumption of genetically modified (GM) foods
- allergenicity associated with consumption of GM food products
- volume and value of GM food products traded
- results of certification programmes
- data on traceability /product tracing of GM products and data on post market monitoring.

Other: The emergence of other types of production processes such as organic farming and integrated agriculture and their products as well as the continuing or increasing importance in markets in some regions of traditional and regional food products is leading to a situation where data and information is needed for a greater than ever range of foods to facilitate their regulation in terms of food safety and quality.

Incidence of disease

Food-borne diseases: Because of the globalization of the food supply and the increase in reported food-borne diseases, there is a need for global food-borne disease surveillance. Such global surveillance must be based on data generated and shared from national surveillance/food data systems. Information generated serves to establish a baseline to measure the burden of food-borne diseases; to monitor trends and patterns of these diseases and investigate, control and prevent outbreaks. Trends in food-borne diseases permit to identify emerging food safety issues and to evaluate food-borne-diseases prevention and control measures, helping to prioritize efforts and resources.

Surveillance of food-borne diseases is becoming an increasingly high priority in the public health agenda in many countries. It is instrumental for estimating the burden of food-borne diseases, assessing its relative impact on health and economics and evaluating disease prevention and control programmes. It allows rapid detection and response to outbreaks. In addition, it is a major source of information for conducting risk assessment, and more broadly for risk management and communication.

Diet-related chronic diseases: Diet-related chronic diseases, often with their aetiology in obesity, are increasing in both developed and developing countries, while micronutrient malnutrition remains a significant problem for much of the world, with children, women and the elderly being the most vulnerable. Consumers and officials in many government sectors are recognising the importance of nutrient composition data for formulating and achieving dietary guidelines and goals to reduce the so-called double burden of malnutrition.

III. CURRENT AVAILABILITY OF RELEVANT DATA

At present there is a lack of adequate data to support food safety and quality programmes, at national, regional and global levels. This is due to several reasons: it has not been previously considered important to collect these data; data needs are not clearly identified; data are too expensive to obtain or data are impossible to obtain given current technology. Often data are old and no longer relevant or may not exist in many countries; data may have been collected and or reported in a fashion that does not match the new or current needs; data that are available may be sparse, aggregated or intermittent and there may not be access to raw, unaggregated data or background information on data collection and analysis may not be available (e.g. year of completion, country of origin, type of sample, possible transformation of the data, methods of analysis, type of agent, population demographics, etc).

Therefore, there is a need in the first instance to define concrete national and global data needs in order to clearly set up a short and long term approach to build up the system to generate the information needed and facilitate their collection and analysis. The definition of needs at regional level will require a good level of coordination and negotiation among different national authorities in order to set priorities and define resources available/needed for this purpose. The completion of an inventory of data needs/data availability in Europe constitutes a first step in the right direction.

Once such an inventory is completed, it will be necessary to identify and generate priority statistics to support food quality and safety activities and to make a plan for the enhancement of information/data sources and the improvement of the statistical systems needed for collection and analysis. This could be outlined in a timetabled framework and followed by the training of individuals that produce data and collect/analyze them. Clear definition of indicators of success will also need to be considered at this stage in order to be able to monitor progress. Thus, countries from the Region interested on the collection of good statistical data need to define clearly their data needs and then design or re-design the system for its collection and analysis.

At the international level a number of statistical databases are available. The FAOSTAT system is one of FAO's most important statistical databases. It includes, among other information, agricultural

production statistics for the 20 most important food and agricultural commodities (ranked by value) in a given country by year; food balance sheets which present a comprehensive picture of the pattern of a country's food supply during a specific reference period; statistics on trade flow, and more (<http://www.fao.org/es/ess>). The FAO statistical databases for contaminants, which contain the internationally agreed Codex Alimentarius MRL's for pesticide and veterinary drug residues in food are also included in FAOSTAT.

The Global Environment Monitoring System - Food Contamination Monitoring and Assessment Programme (GEMS/Food) has been in operation since 1976. WHO has implemented this programme which has informed governments, the Codex Alimentarius Commission and other relevant institutions, as well as the public, on levels and trends of contaminants in food, their contribution to total human exposure, and significance with regard to public health and trade. Detailed instructions are provided in the GEMS/Food Electronic Reporting Manual (<http://www.who.int/foodsafety/publications/chem/en/gemsmanual.pdf>). Related to this are total diet studies (TDS), which are the primary sources of information on the levels of various chemical contaminants and nutrients in the diet. They can provide general assurance that the food supply is safe from certain chemical hazards and to develop priorities for possible risk management intervention. In addition, TDS results can be an indicator of environmental contamination by chemicals. TDS can also be used to assess the effectiveness of measures to reduce exposure of the population to chemical hazards. Its use in a harmonized, statistically validated way should be encouraged.

The European Commission's Scientific Co-operation (SCOOP) task forces have collected and collated data on the occurrence and intake of a range of chemicals and contaminants in foods in European Union countries.

In Europe, the WHO Regional Office for Europe has a surveillance programmed for control of food-borne infections and intoxications (http://www.euro.who.int/foodsafety/surveillance/20020903_3). Other recognized regional surveillance systems for food-borne-diseases which provide some useful information about the type of data to be collected include the WHO Global Salm-Surv, EnterNet, and Food Net (WHO, 2001).

At the international level, The FAO/UNU International Network of Food Data Systems (INFOODS) (www.fao.org/infoods) coordinates efforts to improve the quality and availability of food composition data worldwide. INFOODS provides leadership and administrative framework for the development of standards and guidelines for collection, compilation, and reporting of food component data. It has established a global network of regional data centres (e.g. LATINFOODS (<http://www.inta.cl/latinfoods/default.htm>)) directed toward the generation, compilation and dissemination of accurate and complete data on food composition.

IV. ADDITIONAL DATA REQUIREMENTS AND ADDRESSING EXISTING PROBLEMS AND LIMITATIONS

As presented above, the data requirements for food safety and control purposes are extensive. Not all of the necessary data are currently available and in cases where data are available, they are not always in the appropriate format or may no longer be relevant due to changes in production, processing, consumer behaviour and consumption practices, or changes in the prevalence or level of the hazard of concern. To provide a concise summary of the additional data requirements is not feasible as these will vary according to country, population, foods consumed and the specific hazard or process of concern. However, in general, in countries, such as many developing countries or some countries in transition, data relevant to food safety and quality issues often do not exist. Therefore, there is a clear need in particular for data that is specific to these countries in order to get a better understanding of their food safety situation and undertake risk assessments that are relevant to these countries. These country specific data include:

- Data on consumption patterns and dietary intake (including range of foods, serving sizes, frequency of consumption etc.) for the general or national as well as specific target populations or sub population groups.
- Data on contaminants (chemical and microbiological) and other chemicals (e.g. additives, residues) in foods, their sources, pattern of occurrence, prevalence and levels.
- The effect of production, processing and preparation practices as well as food product composition on the chemical or microbiological contaminants or other chemicals of concern in foods.

As we move towards integrated risk based systems of food control there is a need, more than ever, for collaboration between the different sectors involved in food production, food technology, food regulation, consumer protection and human health. One area of collaboration relates to the sharing of data and the integration of data collection systems from the different sectors. For example, currently data on food-borne diseases and food monitoring data are generated in isolation from one another. However, the risk assessment approach combines such data. In reality, and often for historical reasons, clinical toxicology/poisons information, regulatory toxicology/risk assessment, food-borne disease data, contaminant monitoring data etc, exist in parallel worlds, having developed as separate disciplines. However, they share common objectives to protect human health and the integration of these various data or data sources and the availability of standardised methodology to achieve this is important in terms of improving the data available for food safety and quality issues. For example, the integration of surveillance data from animals, foodstuffs and humans, would enable the attribution of human cases of food-borne disease, for example of salmonellosis, to specific foods through the use of technologies such as genetic finger-printing.

The existing problems and limitations of the data available vary not only according to the type of data and also its intended use e.g. at the international or regional level versus the national level. A few of the key issues in relation to certain types of data are considered in more detail.

As indicated previously data from certain countries are often sparse or lacking altogether. However, in many cases where data exist, for various reasons they are not available for use in addressing food safety and quality issues and undertaking risk assessment. Often “calls for data” issued by international organizations prior to any safety or risk assessment exercise do not reach those persons holding such data or the mechanism for the submission of data by institutions is not clear. In addition, some of the data which are submitted often lack critical information on how the data were generated. Data on contaminants is also available in the scientific literature. However, these data are often lacking essential information necessary to permit their use by the assessors. Incomplete information can greatly diminish the usefulness of the data for risk assessment purposes.

It is essential to seek ways to make the calls for data more widely known at both technical and policy levels in developing countries and to directly contact governments and other potential data providers to facilitate the submission of such data to risk assessors.

Data providers in both developing and industrialized countries should enhance their efforts to submit their information to JECFA and to use the electronic GEMS/Food format in order to facilitate the collation and quality control of data.

To allow for independent assessment of the quality of the data, the submission of data should be accompanied by additional details on the sampling plan and analytical method used to generate the data.

International estimates of intake are usually prepared by combining the international weighted means of contamination levels with the food consumption values reported in the GEMS/Food database. However, in regions with little or no contaminant concentration data, the use of this broad assumption may result in a mismatch between the foods considered and the contaminant concentration data employed. There is a need to have occurrence data on contaminants in foods as consumed in

developing countries. This information will be useful in conducting intake assessments as well as considering mitigation approaches to reduce human exposure. Data on contaminant concentration in foods from total diet studies conducted either at the national level, or at the regional level within a given country, or from more limited, market basket surveys targeting special foods, are essential for performing valid risk assessment. Also for distributions of concentrations or mean concentrations of contaminants in foods, data on individual samples is required for calculating intakes at the regional level. It is important that raw data from individual samples be available to allow estimates of the regional intakes to be made.

Another existing problem with the available data is that mitigation measures may have been effective in reducing residual concentrations of the contaminant, either chemical or microbiological, in the food and that, consequently, the older data published and used to make the initial estimates of intake or exposure to the contaminant no longer accurately reflect current intake or exposure from the food.

In addition, clear interpretation of the significance of the contaminant to human health is often not possible due to a lack of mechanistic information and adequate data on dose–response relationships. For chemical hazards there is no systematic database on toxicity including long-term studies on the main congeners present in the diet, using standardized testing protocols that could be used to define a NOEL for individual contaminants of importance. For microbiological hazards the generation of dose–response relationships often relies on data from old volunteer studies and there is a need to better utilise or collect additional data from outbreak investigations to improve our understanding of the dose–response.

With regard to microbiological risk assessment (MRA) appropriate data on consumption is not always available. As an adverse health effect from a microbiological hazard can occur as a result of a single exposure information on the frequency of consumption of particular foods together with the serving size is important. However, as consumption data is often presented in an aggregated manner this type of information is not always readily available.

It is also worth noting that much of the data that is valuable for assessing food safety and quality issues as well as nutritional issues is often considered as uninteresting. Such data is providing us with a picture of a current situation rather than providing something new or novel. This can be problematic in terms of publishing data in scientific journals as well as attracting budgetary resources. However, this also highlights the importance of integrating different data collection systems as in combination the information they provide becomes more valuable and does in fact allow the generation of new insights in terms of addressing food safety and quality and nutrition issues.

Finally, it is important that new data is generated using standard methodology. A sampling protocol is needed to ensure that statistically meaningful samples are gathered and tested. Validated analytical techniques should be used for microbiological testing and chemical and contaminant analysis. Appropriate data analysis methods need to be used. Typically, quantitative data are needed for estimating risk; therefore enumeration methods, rather than presence/absence tests are specifically important in the microbiological fields where they have not always been used. The data generated should be analyzed and assessed in the context of all other relevant data. Data should be evaluated with respect to 1) experimental uncertainties and 2) whether the conclusions address the question that was originally posed. Assumptions may be required to save time, money, or resources, and these should be listed to ensure that the data are used in the appropriate context. Standardised or common approaches for collecting data that are statistically relevant is important but such approaches must also be feasible within limited resources. This, together with harmonization of the approaches used in data analysis and the development of statistical models has the potential to allow greater use of limited data as it would help overcome the problem of data incompatibility which means that even when there are numerous data available they are not suitable for use in combination.

V. RECOMMENDATIONS

From the available data at present, there emerges a clear need for strengthening and integrating statistical data for food safety purposes. Food-borne disease surveillance programmes should be integrated with food monitoring programmes so that relevant data can be generated along the entire feed-food chain. These data should in turn be integrated with national food consumption pattern data. Integrating such data would result in a robust surveillance information and allow appropriate priority setting and public health interventions. Intersectorial and inter-institutional collaboration are of paramount importance.

The meeting may wish to approve the following recommendations/actions:

- Call on concerned parties and partner agencies to work together to develop/enhance networks that would facilitate the collection/integration of new data for use in food safety related work;
- Call on FAO and partner agencies to further enhance their capacity building programmes to assist developing countries in their effort to systematically generate, compile, disseminate and use data to enhance all activities related to food safety and quality.
- Call for support from public, private and for public/private partnerships to enhance the capacity building efforts in this field.
- Recommend that member countries of the Region make concrete steps toward the integration of data needed for food safety and quality purposes and the harmonization of the methodologies with international efforts in this area.

VI. REFERENCES

FAO [Food and Agriculture Organization of the United Nations], 2005a. Causes of detentions and rejections in international fish trade. Fisheries Technical Paper 473. Rome, Italy.

FAO, 2005b. Analysis of notifications on food safety issues submitted to the World Trade Organization Committee on Sanitary and Phytosanitary Committee from January 2000 to January 2005. Food and Nutrition Division. Internal document.

Martínez Palaou, A.M., 2003. How to capture concepts on food safety in statistical terms: A framework for general definitions. Paper presented by Eurostat at the Joint UNECE/EUROSTAT/FAO/OECD Meeting on Food and Agricultural Statistics in Europe (Geneva, 2-4 July 2003).

WHO. 2001. Global surveillance of food-borne disease: Developing a strategy and its interaction with risk analysis. Report of a WHO consultation. Geneva, Switzerland, 26 – 29 November 2001.